

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application per MPEP 714:

Listing of Claims

Claim 1 (Currently Amended): A method for processing storage data that is to be communicated over a network, comprising:

providing storage data to be transmitted over a network;

serializing the storage data that was provided using storage encapsulation protocol (SEP) headers to generate serialized storage data;

encapsulating the serialized storage data that was serialized using the SEP with a simple transport protocol (STP) to generate simple transport protocol data segments of the storage data; and

determining whether each of the data segments is a control type data segment based on a type field value of a corresponding STP header, if the data segment is a control type data segment, then the method includes,

setting a sequence number of a sequence number field of the corresponding STP header to a sequence number of a last sent stream data packet; and

encapsulating each of the simple transport protocol data segments into Ethernet frames.

Claim 2 (Original): A method for processing storage data that is to be communicated over a network as recited in claim 1, wherein the serializing of the storage data using storage encapsulation protocol headers to generate serialized storage data includes:

receiving the storage data, the storage data including one or both of commands and data, the commands including write commands, read commands, control commands, and status commands;

selecting portions of the received storage data to be serialized, the selected portions including commands and data; and

appending storage encapsulation protocol headers to each of the selected portions.

Claim 3 (Canceled)

Claim 4 (Original): A method for processing storage data that is to be communicated over a network as recited in claim 1, wherein the encapsulating of each of the simple transport protocol data segments into Ethernet packets includes:

generating media access controller (MAC) header;

appending the simple transport protocol segments to the MAC header; and

appending a cyclic redundancy check (CRC) to the simple transport protocol segments.

Claim 5 (Currently Amended): A method for processing storage data that is to be communicated over a network as recited in claim 3 1, wherein the ~~simple transport protocol headers each corresponding STP header includes~~ at least a handle field, ~~a type field~~, a length field, ~~a sequence number field~~, and an acknowledgment field.

Claim 6 (Original): A method for processing storage data that is to be communicated over a network as recited in claim 5, wherein the handle field is used to exchange a handle

during the commencement of a session, the handle being exchanged between a initiator and a target of the network.

Claim 7 (Currently Amended): A method for processing storage data that is to be communicated over a network as recited in claim 5 1, wherein the sequence number field is configured to count Ethernet frames.

Claim 8 (Original): A method for processing storage data that is to be communicated over a network as recited in claim 5, wherein the acknowledgment field is used to exchange positive and negative acknowledgments of transactions.

Claim 9 (Original): A method for processing storage data that is to be communicated over a network as recited in claim 1, wherein the storage encapsulation protocol contains a tag so that data segments and data segments of the storage data can be matched to a correct command.

Claim 10 (Currently Amended): A method for processing storage data that is to be communicated over a network as recited in claim 1, wherein the ~~STP simple~~ transport protocol is configured to provide a stream of bytes arriving in ~~the a~~ same order as ~~they the~~ stream of bytes were sent.

Claim 11 (Original): A method for processing storage data that is to be communicated over a network as recited in claim 1, further comprising:
appending an IP header to each of the simple transport protocol data segments.

Claim 12 (Previously Presented): A method for processing storage data that is to be communicated over a network as recited in claim 1, wherein the storage data is selected from one of small computer system interface (SCSI) data, AT Attachment Packet Interface (ATAPI) data, and ultra direct memory access (UDMA) data.

Claim 13 (Currently Amended): A method for communicating storage data over an Ethernet network using a non-TCP lightweight transport protocol, comprising:

providing data having a peripheral device protocol format, the data to be communicated over the Ethernet network;

selecting portions of the data having the peripheral device protocol format;

attaching storage encapsulation protocol (SEP) headers to the selected portions of the data;

attaching simple transport protocol (STP) headers to one or more of the selected portions with the SEP headers to produce STP packets; and

determining whether each of the one or more selected portions is a control type data segment based on a type field value of a corresponding STP header, if the data segment is a control type data segment, then the method includes,

setting a sequence number of a sequence number field of the corresponding STP header to a sequence number of a last sent stream data packet; and

encapsulating the STP packets into Ethernet frames for communication over the Ethernet network.

Claim 14 (previously presented): A method for communicating storage data over an Ethernet network using a non-TCP lightweight transport protocol as recited in claim 13, wherein the peripheral device protocol format is one of a small computer system interface (SCSI) format, an AT Attachment Packet Interface (ATAPI) format, and an ultra direct memory access (UDMA) format.

Claim 15 (Currently Amended): A method for communicating storage data over an Ethernet network using a non-TCP lightweight transport protocol as recited in claim 13, wherein the STP headers include at least a handle field, a type field, a length field, a sequence number field, and an acknowledgment field.

Claim 16 (Original): A method for communicating storage data over an Ethernet network using a non-TCP lightweight transport protocol as recited in claim 15, wherein the handle field is used to exchange a handle during the commencement of a session, the handle being exchanged between a initiator and a target of the network.

Claim 17 (Original): A method for communicating storage data over an Ethernet network using a non-TCP lightweight transport protocol as recited in claim 15, wherein the sequence number field is configured to count Ethernet frames.

Claim 18 (Original): A method for communicating storage data over an Ethernet network using a non-TCP lightweight transport protocol as recited in claim 15, wherein the acknowledgment field is used to exchange positive and negative acknowledgments of transactions.

Claim 19 (Canceled)

Claim 20 (Currently Amended): A method for communicating data over a network using a non-TCP lightweight transport protocol, comprising:

providing data, the data to be communicated over the network;
selecting portions of the data that is to be communicated over the network;
attaching simple transport protocol (STP) headers to the selected portions of the data to produce STP packets; **and**

determining whether each of the selected portions is a control type data segment based on a type field value of a corresponding STP header, if the data segment is a control type data segment, then the method includes,

setting a sequence number of a sequence number field of the corresponding STP header to a sequence number of a last sent stream data packet; and
encapsulating the STP packets into frames for communication over the network.

Claim 21 (Original): A method for communicating data over a network using a non-TCP lightweight transport protocol as recited in claim 20, wherein the data is one of storage data, network data, file data, and virtual interface data.

Claim 22 (Original): A method for communicating data over a network using a non-TCP lightweight transport protocol as recited in claim 20, wherein the network is configured to communicate storage data.